**Preparing for Kepler: Simulating Stellar Microvariability**

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The Kepler mission will begin to return 150,000 broad-band light curves of main sequence G-M stars in about 3 years. These will have unprecedented precision, and be virtually continuous for at least 4 years. Although their primary purpose is the detection of transits by extrasolar terrestrial planets, this is obviously a treasure-trove of information on stellar activity and rotation. To prepare for this deluge of high quality data, we are conducting a research program to understand and simulate stellar microvariability. We hope to learn how to extract maximal information from the Kepler lightcurves, and to be prepared to ingest and analyze such a large quantity of new data. We have begun by trying to understand the Sun as a microvariable star (see poster by Soto et al.). Using the laws which govern continuum variability as a function of magnetic configurations, we have begun to produce simulated stellar data. We demonstrate this process, and discuss what purpose these simulations might be put to. They include finding rotation periods (not always easy!), understanding the appearance of stars viewed at different inclinations (can we actually derive inclination?), extraction of magnetic distributions in longitude and latitude, size- and time-scales for active regions and starspots, and the behavior of all this as a function of stellar mass and age.